

AMENDED IN ASSEMBLY MARCH 31, 2011

CALIFORNIA LEGISLATURE—2011–12 REGULAR SESSION

**ASSEMBLY BILL**

**No. 296**

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**Introduced by Assembly Member Skinner**

February 9, 2011

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~~An act relating to global warming.~~ *An act to add Chapter 5 (commencing with Section 14457) to Part 5 of Division 3 of Title 2 of the Government Code, and to add Section 17929 to the Health and Safety Code, relating to building standards.*

LEGISLATIVE COUNSEL'S DIGEST

AB 296, as amended, Skinner. ~~Global warming: urban heat island effects pavement.~~ *Building standards: cool pavement.*

*(1) Existing law requires the Department of Transportation to adopt a balanced, multimodal research and development program, including the research and development of new technologies.*

*This bill would establish the Cool Pavements Research and Implementation Act and would require the department, in consultation with specified state agencies, to implement the act. The bill would require the department to adopt a strategy, through a public process, to implement the act and, by January 1, 2015, to adopt by regulation a Cool Pavements Handbook to detail testing protocols, standards, and best practices.*

*The bill would require the department to implement one or more cool pavement pilot projects, with the goal of completion of the pilot projects no later than January 1, 2018, and to submit a report to the Legislature with an analysis of the various costs of pavement surfaces and the results of the cool pavement pilot projects.*

*The bill would direct the department, on and after January 1, 2018, to require a state paving project, as defined, to include a cool pavement surface that complies with the Cool Pavements Handbook for not less than 75% of the total project pavement surface area.*

*(2) The California Building Standards Law requires any building standard adopted or proposed by a state agency to be submitted to, and approved or adopted by, the California Building Standards Commission prior to codification.*

*The State Housing Law requires the Department of Housing and Community Development to submit to the commission proposed building standards for hotels, motels, lodging houses, apartment houses, and dwellings.*

*This bill would require the department, in the next triennial adoption process of the California Green Building Code that begins on or after January 1, 2012, to propose building standards that authorize the use of cool pavements in the construction of any exterior paved surface in, or related to the construction of, a structure such as a patio, sidewalk, or driveway, or all or a portion of a dwelling unit, hotel, motel, or lodging house.*

~~*The California Global Warming Solutions Act of 2006 requires the State Air Resources Board to adopt regulations to address global warming caused by the emission of greenhouse gases by reducing the emission of those gases to certain specified levels.*~~

~~*This bill would state the intent of the Legislature to enact legislation that would regulate the reflectivity (albedo) of pavement to reduce the urban heat island effect.*~~

Vote: majority. Appropriation: no. Fiscal committee: ~~no~~-yes.  
State-mandated local program: no.

*The people of the State of California do enact as follows:*

1     *SECTION 1. The Legislature finds and declares all of the*  
2     *following:*

3     *(a) The intent of this act is to create a comprehensive “cool*  
4     *pavements” program to address heat island effect (HIE), a*  
5     *phenomenon characterized by the temperature differential between*  
6     *developed and rural areas.*

7     *(b) The cause of the HIE is land modification in urban and*  
8     *suburban areas, principally with impervious hardscape materials*  
9     *that retain more heat energy from the sun than do soil or vegetative*

1 *surfaces. When this trapped heat reradiates to the surroundings,*  
2 *surface and air temperatures become artificially elevated.*

3 *(c) Impervious cover is also a major contributor to stormwater*  
4 *runoff, leading to pollution and elevated water temperatures, which*  
5 *can pose problems for some aquatic life.*

6 *(d) This act aims to mitigate the HIE from paved hardscape*  
7 *surfaces, which may be done by switching to so-called cool*  
8 *pavements. The use of cool pavements reduces the localized HIE,*  
9 *providing some or all of the following benefits:*

- 10 *(1) Reduced ambient temperatures.*  
11 *(2) Reduced formation of ground-level ozone or smog.*  
12 *(3) Reduced stormwater runoff.*  
13 *(4) Reduced wear from diurnal thermal stress.*  
14 *(5) Indirectly reduced demand for electricity, and hence reduced*  
15 *emissions.*

16 *(e) Examples of cool pavements include, but are not limited to,*  
17 *high albedo pavements and coatings, vegetative surfaces, porous*  
18 *or pervious pavements that allow water infiltration, and shaded*  
19 *pavements.*

20 *(f) The program established by this act should complement the*  
21 *nonresidential voluntary provision in the California Green Building*  
22 *Standards Code on HIE-reducing pavements (Section A5.106.11.1*  
23 *of Appendix 5 of Part 11 (commencing with Section 101.1) of Title*  
24 *24 of the California Code of Regulations), while expanding the*  
25 *allowable ways to meet the goals of that provision.*

26 *(g) This act provides for the development of a Cool Pavements*  
27 *Handbook by the Department of Transportation (Caltrans), in*  
28 *consultation with other relevant state agencies and departments,*  
29 *to establish metrics, tests, benchmarks, and best practices for*  
30 *alternatives that mitigate the HIE of all traditional hardscape*  
31 *surfaces.*

32 *SEC. 2. Chapter 5 (commencing with Section 14457) is added*  
33 *to Part 5 of Division 3 of Title 2 of the Government Code, to read:*  
34

35 *CHAPTER 5. COOL PAVEMENTS RESEARCH AND*  
36 *IMPLEMENTATION ACT*  
37

38 *14457. For purposes of this chapter, the following definitions*  
39 *shall apply:*

1 (a) “Cool pavement project” means a project that uses a  
2 qualified cool pavement for the purposes of mitigating the heat  
3 island effect, and that meets the performance and use standards  
4 for HIE-mitigation specified in the Cool Pavements Handbook  
5 adopted pursuant to Section 14460.

6 (b) “Heat island effect” or “HIE” means the temperature  
7 differential between developed and rural areas caused by  
8 impervious hardscape materials.

9 (c) “Rural area” means a nonurban area identified by the  
10 department based on the loan eligibility criteria of the Rural  
11 Housing Service of the United States Department of Agriculture,  
12 Rural Development Administration, or its successor agency. Those  
13 criteria include, but are not limited to, places, open country, cities,  
14 towns, or census designated places with populations that are less  
15 than 10,000 persons.

16 (d) “State paving project” means a project carried out by a  
17 state agency or department, or funded by state funds, to construct  
18 a sidewalk, road, plaza, highway, parking lot, schoolyard, or any  
19 surface designed for vehicular or pedestrian use.

20 14458. (a) The department shall implement this chapter in  
21 consultation with the Department of General Services, the State  
22 Building Standards Commission, the State Water Resources  
23 Control Board, the State Energy Resources Conservation and  
24 Development Commission, the State Air Resources Board, the  
25 State Water Quality Control Board, and any other relevant state  
26 department or agencies.

27 (b) The department may enter into an agreement with the United  
28 States Department of Transportation to coordinate implementation  
29 of Sections 14460 and 14461, including exploring the goals and  
30 various costs of paving materials and techniques.

31 (c) This chapter shall be known, and may be cited, as the Cool  
32 Pavements Research and Implementation Act.

33 14459. The department shall adopt a strategy, through a public  
34 process, to implement this chapter. This strategy shall identify the  
35 HIE-mitigating options for traditionally hardscape surfaces,  
36 including, but not limited to, sidewalks, roads, plazas, highways,  
37 parking lots, schoolyards, and any surface designed for vehicular  
38 or pedestrian use.

39 14460. (a) On or before January 1, 2015, the department shall  
40 adopt, by regulation, a Cool Pavements Handbook, that details

1 the testing protocols, standards, and best practices for cool  
2 pavement projects. The department shall consult and incorporate  
3 existing specifications, testing protocols, and best management  
4 practices in developing this handbook, when possible. The  
5 department shall assemble a team of stakeholders for determining  
6 specific tests and benchmarks to be used as qualifying metrics for  
7 cool pavement materials and surfaces.

8 (b) The Cool Pavements Handbook shall require a cool  
9 pavement project to do one or more of the following to mitigate  
10 the HIE:

11 (1) Reduce pavement from diurnal thermal stress.  
12 (2) Increase the albedo of the pavement to 0.5 or higher.  
13 (3) Reduce surface or air temperatures relative to traditional  
14 asphalt concrete.

15 (4) Remove greenhouse gases through photocatalytic processes.

16 (5) Abate stormwater runoff via increased water infiltration to  
17 the underlying surface, including, but not limited to, using porous,  
18 open grid, and vegetative surfaces.

19 (c) The department may include, in the Cool Pavements  
20 Handbook, any other material or technique found by the  
21 departments to mitigate the HIE.

22 (d) The Cool Pavements Handbook shall be referenced in the  
23 relevant sections of the department's Construction Manual and  
24 be made available to the public.

25 14461. (a) The department shall implement one or more cool  
26 pavement pilot projects, with the goal of completion of the pilot  
27 projects no later than January 1, 2018.

28 (b) On or before January 1, 2018, the department shall submit  
29 a report, in compliance with Section 9795, to the Legislature with  
30 an analysis of the various costs of pavement surfaces and the  
31 results of the cool pavement pilot projects. The report shall focus  
32 on the life cycle and durability of various pavement options.

33 (c) The requirement for submitting a report imposed under  
34 subdivision (b) is inoperative on January 1, 2022, pursuant to  
35 Section 10231.5 of the Government Code.

36 14462. (a) On and after January 1, 2018, the department shall  
37 require that a state paving project, including, but not limited to,  
38 newly paved surfaces and repaved surfaces, to include a cool  
39 pavement surface that complies with the Cool Pavements Handbook

1 *adopted pursuant to Section 14460 for not less than 75 percent of*  
2 *the total project pavement surface area.*

3 *(b) The 75-percent requirement of subdivision (a) may be met*  
4 *using any combination of different qualifying cool pavement*  
5 *methods that meet the requirements of the Cool Pavements*  
6 *Handbook.*

7 *(c) This section does not apply to any of the following:*

8 *(1) A state paving project in an area that is substantially shaded*  
9 *by trees, manmade structures, or tall buildings.*

10 *(2) A state paving project in a rural area.*

11 *SEC. 3. Section 17929 is added to the Health and Safety Code,*  
12 *to read:*

13 *17929. (a) For the purposes of this section, a “cool pavement”*  
14 *means an engineered pavement that meets the qualifications and*  
15 *use standards set out in the Cool Pavements Handbook, adopted*  
16 *pursuant to Chapter 5 (commencing with Section 14457) of Part*  
17 *5 of Division 3 of Title 2 of the Government Code.*

18 *(b) In the next triennial adoption process of the California*  
19 *Building Code (Title 24 of the California Code of Regulations)*  
20 *that begins on or after January 1, 2012, the department shall*  
21 *propose building standards that authorize the use of cool*  
22 *pavements in the construction of any exterior paved surface in, or*  
23 *related to the construction of, a structure such as a patio, sidewalk,*  
24 *or driveway, or all or a portion of a dwelling unit, hotel, motel,*  
25 *or lodging house.*

26 ~~SECTION 1. It is the intent of the Legislature to enact~~  
27 ~~legislation that would regulate the reflectivity, otherwise known~~  
28 ~~as albedo, of pavement to reduce the urban heat island effect.~~